

Remarks

For the Specification:

The applicants hereby amend the specification to correct minor typographical and/or grammatical errors. These amendments add no new subject matter.

For the Claims:

The applicants submitted claims 1-26, of which claims 1, 7, 14, and 15 were independent claims. The Office Action rejects claims 1-26 and objects to claims 8 and 12 as containing informalities. The applicants hereby amend claims 1, 3, 6, 8, 12, and 21, and retain claims 2, 4-5, 7, 9-11, 13-20, and 22-26 as originally submitted. The applicants respectfully request reconsideration.

Section 1 of the Office Action objects to claims 8 and 12 because of informalities.

The applicants hereby amend claims 1, 3, 6, 8, 12, and 21 to correct typographical and/or grammatical errors. The applicants respectfully request reconsideration of claims 1, 3, 6, 8, 12, and 21.

Section 2 of the Office Action rejects claims 1-5, 7-12, 14-20, 22-24, and 26 under 35 U.S.C. 103(a) as being unpatentable over the applicants' allegedly admitted prior art in view of Black, U.S. Patent No. 6,397,070 (hereinafter Black).

In regard to claims 1, 7, 12, 14-15, and 22, the Office Action asserts that, since Black teaches a method and apparatus

for estimating reverse link loading in a wireless communication system it would be obvious for the hub radio of Black to remotely adjust the performance of a user radio.

Black teaches the monitoring of forward (hub-to-user) and reverse (user-to-hub) communication links with user radios. When loading is excessive, the hub radio adjusts its transmission so that a forward communication link is reduced in power. This reduction in power is then interpreted by the user radio in question as an increase in distance between the user radio and the hub radio. The user radio then switches to a new hub radio, thereby relieving the loading of the original hub radio.

In no way does Black teach the adjustment of any transmission characteristic of the user radio. Reading the adjustment of a transmission characteristic of a user radio into Black evidences confusion between what applicants teach in the their specification with what Black teaches. This constitutes hindsight and is not permitted.

Black does not teach what the applicants claim in independent claims 1, 7, 14, and 15, either alone or in combination with any prior art that was discussed in the background section of the applicants' specification. In claim 1, the applicants claim:

A communication system having remote power amplifier linearization, said system comprising:

at least one user radio having a power amplifier linearizer that applies a transfer function to a modulated data stream, is coupled to a power amplifier, and is configured to transmit a communication signal generated by said power amplifier of said user radio; and

a hub radio configured to receive said communication signal transmitted from said at least one user radio, to generate a signal quality measurement for said communication signal, to formulate commands in response to said signal quality measurement for said

communication signal, and to transmit said commands, wherein said one user radio is further configured to adjust said transfer function of said power amplifier linearizer of said user radio in response to one of said commands so that said user radio power amplifier becomes remotely linearized.

Black does not teach a user radio having a power amplifier linearizer, nor does Black teach a hub radio that generates a to-be-transmitted control signal configured to instruct a user radio how to adjust its linearizer, nor does Black teach transmitting such a control signal to a user radio, nor does Black teach about a user radio using a received control signal to affect its power amplifier linearizer. It is only through hindsight that the Office Action may construe Black to be similar in function and/or to contain components (i.e., the power amplifier linearizer) similar to the present invention.

It is the goal of the Black system to simply trick a legacy population of user radios into switching to a second hub radio to relieve the loading burden on a first hub radio. Were Black to be modified to fulfill the functions of the present invention, it would require significant investment in the measurement of the quality of the signals received from the user radios. And, it would still be incompatible with the legacy population of user radios. So it would require further investment in the modification of the legacy population of user radios so that they would then "adjust said transfer function of said power amplifier linearizer of said user radio in response to one of said commands," as recited in claim 1. Such investment would deny Black the ability to simply and quickly trick user radios into switching to hub radio to relieve the loading burden of the hub radio. Black teaches away from such massive modifications. Therefore, it would not have been obvious to one of ordinary

skill in the art to modify Black to fulfill the functions of or contain the components of the present invention.

The applicants believe that independent claim 1, as amended for grammatical reasons (discussed hereinbefore) is allowable over Black in that Black does not teach what is claimed, to wit, the adjustment of a user radio power amplifier linearizer transfer function in response to a command from a hub radio.

Independent claim 7 is specifically directed to a hub radio. But Black, either alone or in combination with the other references, fails to teach or suggest "a controller configured to estimate a power amplifier linearizer transfer function in response to said signal quality measurement" as recited therein.

Independent claim 14 is specifically directed to a user radio. But Black, either alone or in combination with the other references, fails to teach or suggest "a controller coupled to said receiver and said power amplifier linearizer, said controller being configured to adjust said transfer function in response to said commands so that said power amplifier becomes remotely linearized," as claimed in claim 14. The commands referred to in this passage of claim 14 are received "from outside said user radio via wireless communication."

Independent claim 15 is directed to a method that applies to a communication system. The method recites activities that take place at first and second sites, which in one embodiment may be viewed as being a user radio and hub. Black, either alone or in combination with the recited prior art, fails to teach or suggest the recited activities for the same reasons that are presented above in connection with claim 1.

Accordingly, the applicants believe that independent claim 1 is allowable as amended for grammatical reasons (discussed hereinbefore). And, independent claims 7, 14, and 15 are allowable as originally submitted. The applicants respectfully request reconsideration of independent claims 1, 7, 14, and 15.

Claim 12 is dependent from claim 7, and claim 22 is dependent from claim 15. The applicants believe claims 12 and 22 to be allowable by reason of dependency. The applicants respectfully request reconsideration of claims 12 and 22.

In regard to claims 2, 8, and 16, the Office Action asserts that it would have been obvious for the hub radio to monitor the quality of the signal received from a user radio.

In claims 2, 8, and 16, the applicants claim that the hub radio monitors parameter(s) of the communication signal received from the user radio. Black teaches the monitoring of the presence of the communication signals. This is not the same thing.

Since it is the object of Black to adjust the loading burden of the hub radio, it is irrelevant to Black whether or not the communication signals from the user radios have any particular parameters or characteristics. Therefore, monitoring parameters of the communication signals would serve no practical purpose. It is not obvious to expend components, energy, and monies on a function that would serve no practical purpose.

In regard to claims 3-5, 9-11, 17-20, 23-24, and 26 in addition to claims 2, 8, and 16, claims 2-5, are dependent from claim 1, claims 8-11 are dependent from claim 7, and claims 16-20, 23-24, and 26 are dependent from claim 15. The applicants

believe claim 8, as amended for grammatical reasons (discussed hereinbefore), and claims 2-5, 9-11, 16-20, 23-24, and 26, as originally submitted to be allowable by reason of dependency. The applicants respectfully request reconsideration of claims 2-5, 8-11, 16-20, 23-24, and 26.

Section 3 of the Office Action rejects claims 6 and 25 under 35 U.S.C. 103(a) as being unpatentable over the applicants' allegedly admitted prior art in view of Black and further in view of Leyendecker, U.S. Patent No. 5,867,065 (hereinafter Leyendecker).

In regard to claims 6 and 25, the Office Action asserts that Leyendecker teaches the use of a predistortion function in a power amplifier and that communication continues uninterrupted during distortion correction. The Office Action further asserts that Black teaches the transmission of a control signal while communication is in effect.

As discussed hereinbefore in conjunction with independent claims 1, 7, 14, and 15, Black merely reduces the power level of selected forward communication signals to cause those radios to switch to another hub radio.

Leyendecker teaches the monitoring and correction of power amplifier distortion within the same unit. If this unit is taken to be the user radio, then Leyendecker may be viewed as teaching a function that presents a problem specifically addressed by the present invention, i.e., having full predistortion control in each and every user radio.

In accordance with all claims presented herein, predistortion control takes place at location remote to the user radio (e.g.,

the hub radio) thereby significantly reducing overhead, power consumption, and cost in the user radios. Again, it is only through hindsight that the Office Action may construe Leyendecker, with or without Black, to be similar to the present invention. Only applicants specification teaches this feature of controlling predistortion from a remote location.

Were Leyendecker to be modified to fulfill the functions of the present invention, then Leyendecker would no longer be what Leyendecker teaches, i.e., a self-contained distortion-compensating unit. It would not have been obvious to one of ordinary skill in the art to modify Leyendecker so as to render Leyendecker unable to fulfill Leyendecker's functions.

Claim 6 is dependent from claim 1, and claim 25 is dependent from claim 15. The applicants believe claim 6, as amended for grammatical reasons (discussed hereinbefore), and claim 25, as originally submitted to be allowable by reason of dependency. The applicants respectfully request reconsideration of claims 6 and 25.

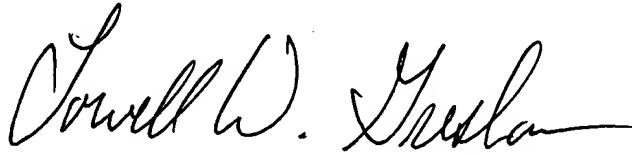
Section 4 of the Office Action rejects claims 13 and 21 under 35 U.S.C. 103(a) over the applicants' allegedly admitted prior art in view of Black and further in view of Cox et al., U.S. Patent No. 5,732,333 (hereinafter Cox).

Claim 13 is dependent from claim 7, and claim 21 is dependent from claim 15. The applicants believe claim 13, as originally submitted, and claim 21, as amended for grammatical reasons (discussed hereinbefore), to be allowable by reason of dependency. The applicants respectfully request reconsideration of claims 13 and 21.

AMENDMENT
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The applicants believe that the foregoing amendments and remarks are fully responsive to the rejections and/or objections recited in the 17 December 2004 Office Action and that the present application is now in a condition for allowance. Accordingly, reconsideration of the present application is respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, reading "Lowell W. Gresham". The signature is written in a cursive style with a horizontal line underneath.

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